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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/550,962	04/17/2000	Akihiro Yamashita	MAT-7947US	1642

7590

03/14/2003

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 03/14/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/550,962

Applicant(s)

YAMASHITA, AKIHIRO

Examiner

Abbas I Abduselam

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2674

## **DETAILED ACTION**

### **Claim Rejections 35 U.S.C. 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-17 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Iwasa et al. (USPN 5978403) in view of Shino et. al. (USPN 6195075) and Okuda et al. (USPN 5844368).

Regarding claims 1, 5, 9, and 13, Iwasa teaches the arrangement of LED and displaying devices. See col.11, lines 21-27. Iwasa teaches a matrix wiring of an anode wire (2), and a cathode wire (3) arranged in multiple numbers. See col. 7, lines 23-30. Iwasa teaches the arrangement of light emitting laser with multiple anode wiring and the application of voltage V2 to the cathode wires (n8 to n14) as well as the connection of current flowing to the anode wiring. See Fig 7, Fig 11 and col. 10, lines 1-6 and col. 13, lines 30-33. Furthermore, Iwasa teaches the time dependance of the current in simulated matrixing along with pattern of current flowing with respect to time elapsed. See col. 14, lines 59-67, and Fig 15. Iwasa also teaches "m.times.n" laser array required for charging and discharging the capacitance of wiring in different cases. See Fig 10. Moreover, Iwasa teaches a photosensitive material drum (40) and a charger for charging the photo sensitive material drum. See col. 15, lines 35-47 and Fig 16. However, Iwasa does not

Art Unit: 2674

specifically disclose the mathematical relationships among luminance and the discharge time for the light emitting element accumulating the charge as opposed to the one with no accumulation. Shino on the other hand teaches the experimental result indicating the relationship between the discharge current  $I_d$ , the discharge time, and the luminance. See col. 10, lines 50-64 and Fig 6. In

Both references teach display systems involving a matrix of anode and cathode wirings. It would have been obvious to one skilled in the art at the time the invention was made; and one would have looked at shino's experimental graph (Fig. 6) to establish the desired relationships among luminance and discharge time of light emitting elements under various scenarios. One would have been motivated in view of the suggestion of Shino the graph showing the experimental results satisfies the desired mathematical relationship.

In addition,, Shino teaches the positive charge being accumulated in the face of dielectric layer (23) during a writing period  $W_1$ . See col. 11, lines 51-6, Fig 1, 8 and 9. Shino's Fig 6 shows a relation between discharge current and luminance on one hand and a relation between discharge current and illumination efficiency on the other hand for plasma display device. See col. 7, lines 1-5. As indicated on the graph shown in Fig 6, the relation between discharge current  $I_d$ , and luminance  $B$  was plotted by a curve and one of ordinary skill in the art would have ascertained that the curve crosses luminance axis at some point making the discharge current value zero. See col. 10, lines 55 and Fig 6. Furthermore, Shino teaches the discharge time of different values with respect scanning and sustaining discharge current values and one of ordinary skill in the art would

Art Unit: 2674

have ascertained the desired discharge time as it relates to discharge current from the plot in Fig 23. See Fig 23(a, b).

Iwasa has been described above. However, Iwasa does not disclose the use of electroluminescence elements in the matrix configuration in which an electrical charge is stored and a mechanism for discharging the stored charge from electroluminescence elements. Okuda teaches a driving system including the use of luminous elements (E1,1 through E256,64) which can be organic electroluminescence elements. Okuda also teaches the storing of electrical charges in each luminous element is discharged through the routed indicated arrows in Fig 2. See col. 1, lines 5-9, col. 4, lines 40-55 and col. 5, lines 38-57.

Both Iwasa and Okuda teach driving systems including a matrix of anode and cathode wirings. It would have been obvious to one of ordinary skill in the art at the time the invention was made; and one would have looked at Okuda's use of electrolumiscence elements and the discharging method associated with elements for the manner in which the matrix driving system works. One would have been motivated in view of the suggestion in Okuda that luminous elements as shown in Fig 2 are equivalent to the desired electroluminescence elements.

In addition, Okuda teaches a driving system in which a luminous element emits light at a fixed time. Okuda also teaches fast scanning that is achieved through driving system whose build up speed all the way to emission is fast. See col. 1, lines 11-23 and col. 2, lines 62-67.

Art Unit: 2674

Regarding claim 2, Shino teaches multiple anodes and cathodes forming strips. See col. 5, lines 1-6.

Regarding claims 4, 6-8, 10-12 and 14, Shino teaches the determination of maximum value luminance, power and current. See col. 15, lines 65-67. In addition, Shino teaches a relationship between discharge current and luminance on the one hand and a relationship between discharge current and illumination efficiency on the other hand. See Fig 6. Shino also teaches the sustaining discharge as it relates to varying time. See Fig 14.

Regarding claim 15, Shino teaches a plasma display device for image display on TV, advertisement display boards etc. see col. 1, lines 13-15.

Regarding claims 16-17, Okuda teaches a driving system in which the electric charge stored in all of the luminous elements is zero. See col. 5, lines 49-54.

### **Conclusion**

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 6,195,142 to Gyotoku et al.

U.S. Pat. No. 5,378,519 to Kikuchi et al.

Art Unit: 2674

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

**Any response to this action should be mailed to:**

Commissioner of patents and Trademarks


Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314**

Hand delivered responses should be brought to crystal park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

  
RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

Abbas Abdulsalam

Examiner

Art Unit 2674